

**WHAT IS CLAIMED IS:**

1. A method for detecting a binding event between at least one binder  
5 and members of a receptor array, comprising the steps of:
  - (a) exposing a plurality of receptors to at least one potential binder;
  - (b) arraying the receptors onto a substrate;
  - (c) exposing each member of the array to X-ray radiation; and
  - 10 (d) detecting a fluorescent signal from any member of the array where a binding event has occurred.
2. The method of claim 1, wherein the receptor comprises at least one organic compound.
3. The method of claim 1, wherein the receptor comprises at least one oligomer.  
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4. The method of claim 1, wherein the receptor comprises at least one polymer.
5. The method of claim 1, wherein the receptor is selected from the group consisting of esters, amines, imines, aldehydes, ketones, amides, ethers,  
20 olefins, halogenated organic molecules, antibodies, drugs, steroids, amino acids, nucleic acids, oligomers, oligonucleotides, oligosaccharides, oligopeptides, polyolefins, polyurethanes, polyesters, polycarbonates, polyamines, polyamides, halogenated polymers, polypeptides, polynucleotides, polysaccharides, nucleic acids, cell membrane receptors, viruses, cells, cellular membranes, and  
25 organelles.
6. The method of claim 1, wherein the binder comprises at least one organic molecule.
7. The method of claim 1, wherein the binder comprises at least one oligomer.  
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8. The method of claim 1, wherein the binder comprises at least one polymer.

9. The method of claim 1, wherein the binder comprises at least one metal ion.

10. The method of claim 4, wherein the binder is selected from the group consisting of esters, amines, imines, aldehydes, ketones, amides, ethers, olefins, 5 halogenated organic molecules, antibodies, drugs, hormones, steroids, amino acids, nucleic acids, oligomers, oligonucleotides, oligosaccharides, oligopeptides, polyolefins, polyurethanes, polyesters, polycarbonates, polyamines, polyamides, halogenated polymers, polypeptides, polynucleotides, polysaccharides, nucleic acids, metal ions, anions, complex ions, oxoanions, polyoxoanions, phosphate, 10 organophosphates, sulfate, organosulfates, zirconate, agonists and antagonists for cell membrane receptors, toxins, enzymes, enzyme substrates, cofactors, and antibodies.